INI CET Anaesthesiology

Sample Paper – 2

Duration: 14 Minutes **Maximum Marks: 15**

Instructions

- This paper contains **15** Multiple Choice Questions (Single Best Response), modelled on the Anaesthesiology content of **INI CET** (Institutes of National Importance Combined Entrance Test) conducted by AIIMS New Delhi.
- The **15-question** length matches the number of Anaesthesiology items you actually meet in the real 200-question paper.
- Each correct answer carries **+1 mark**. There is **negative marking of one-third (0.33) mark** for every incorrect answer; unattempted questions carry no penalty.
- Every question has **exactly one best answer**. Choose the single most appropriate option.
- Attempt this practice paper in one timed sitting of about **14 minutes**, the pace the real computer-based test demands.

Preoperative Assessment and Airway

Q1. The laryngeal mask airway (LMA) is a supraglottic airway device that sits over the glottic opening. A recognised limitation of the classic LMA is that it:

(A) Is the airway of choice for a full-stomach emergency

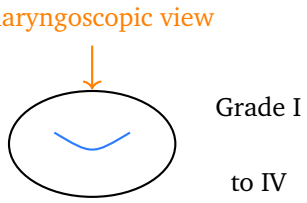
(B) Does not reliably protect the airway against aspiration of gastric contents

(C) Requires direct laryngoscopy to insert

(D) Can only be used with the patient fully awake

Q2. The Cormack-Lehane system shown below grades the best view obtained

at direct laryngoscopy. A grade in which only the epiglottis is seen, with no part of the glottis visible, is:



(A) Grade 3 (only the epiglottis is seen)

(B) Grade 1 (the whole glottis is seen)

(C) Grade 2 (the posterior glottis is seen)

(D) Grade 0 (a normal finding, not part of the scale)

Q3. Rapid sequence induction (RSI) with cricoid pressure is chosen specifically because the patient is at increased risk of:

(A) Regurgitation and pulmonary aspiration, as in a full stomach or emergency surgery

(B) Postoperative nausea only

(C) A difficult intravenous cannulation

(D) Delayed wound healing

General Anaesthesia and Pharmacology

Q4. An intravenous agent that produces dissociative anaesthesia, is a bronchodilator and preserves airway reflexes, but should be used cautiously when intracranial pressure is raised and can cause emergence phenomena, is:

(A) Propofol

(B) Ketamine

(C) Thiopental sodium

(D) Midazolam

Q5. At the end of surgery, residual block from a non-depolarising neuromuscular blocker is reversed with neostigmine. To prevent the muscarinic bradycardia and secretions that neostigmine causes, it is co-administered with:

(A) A further dose of the muscle relaxant

(B) An antimuscarinic such as glycopyrrolate (or, for rocuronium, sugammadex is used instead)

(C) Intravenous suxamethonium

(D) Naloxone

Q6. Which statement about nitrous oxide is correct?

(A) It is a potent complete anaesthetic on its own with a MAC below 1

(B) It has no effect on air-filled spaces in the body

(C) Through the second gas effect it speeds induction, can cause diffusion hypoxia at the end and should be avoided in a pneumothorax

(D) It is the treatment of choice for malignant hyperthermia

Regional and Local Anaesthesia

Q7. The commonly quoted maximum safe dose of lignocaine (lidocaine) for infiltration in an adult is approximately:

(A) 10 mg/kg plain and 15 mg/kg with adrenaline

(B) 1 mg/kg plain and 2 mg/kg with adrenaline

(C) Unlimited, as lignocaine has no toxic ceiling

(D) 3 mg/kg plain and 7 mg/kg with adrenaline

Q8. A young patient develops a severe headache the day after spinal anaesthesia. It is worse on sitting or standing and eases on lying flat. The definitive treatment if it fails to settle is:

(A) Immediate CT of the head and anticoagulation

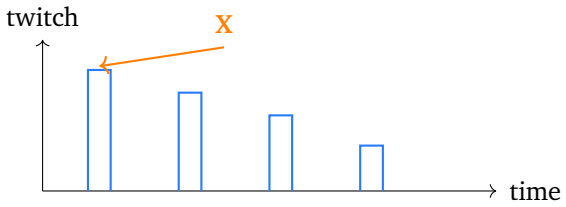
(B) Broad-spectrum intravenous antibiotics

(C) An epidural blood patch

(D) Urgent lumbar decompression surgery

Monitoring, Fluids and Equipment

Q9. A peripheral nerve stimulator delivers the train-of-four (four twitches, marked **X**) shown below. Fade or a reduced fourth twitch is used to monitor:



(A) The degree of neuromuscular blockade

(B) The blood glucose concentration

(C) The depth of hypnosis

(D) The arterial carbon dioxide tension

Q10. Under the ASA standards for basic anaesthetic monitoring, which set is required continuously during every general anaesthetic?

(A) Only the blood pressure

(B) A chest X-ray every hour

(C) An arterial line in all patients

(D) Oxygenation, ventilation, circulation and temperature (pulse oximetry, capnography, ECG and blood pressure)

Q11. Using the ATLS classification of haemorrhagic shock, a fit adult who has become tachycardic and hypotensive with a low urine output and altered mental state has lost approximately:

(A) Less than 5% of blood volume

(B) Exactly 100% of blood volume

(C) Under 10% of blood volume

(D) More than 30 to 40% of blood volume (class III to IV)

Complications and Critical Incidents

Q12. At extubation a lightly anaesthetised patient develops complete airway obstruction with no air entry from reflex closure of the vocal cords (laryngospasm). The correct initial management is:

(A) Remove any stimulus, apply 100% oxygen with continuous positive airway pressure and a jaw thrust, deepen anaesthesia and give suxamethonium if it persists

(B) Immediately perform an emergency tracheostomy

(C) Give intravenous adrenaline as the first step

(D) Extubate fully and leave the patient to recover spontaneously

Q13. Which factor increases the risk of accidental awareness under general anaesthesia (the patient being conscious during surgery)?

(A) Deliberately deep volatile anaesthesia

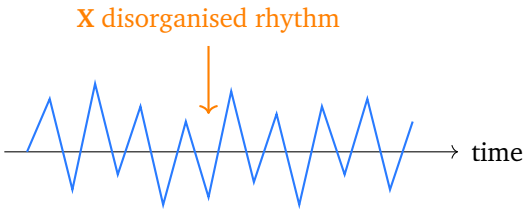
(B) Routine use of a processed EEG depth-of-anaesthesia monitor

(C) The use of neuromuscular blockade with a total intravenous technique, especially during obstetric or cardiac surgery

(D) Avoiding all muscle relaxants

Critical Care, Resuscitation and Pain

Q14. During adult ACLS, the rhythm strip below shows the chaotic waveform (marked **X**) of ventricular fibrillation. Together with pulseless ventricular tachycardia it is treated by:



(A) Immediate synchronised cardioversion at low energy

(B) Carotid sinus massage

(C) Immediate unsynchronised defibrillation (a shockable rhythm), with CPR and adrenaline

(D) Intravenous adenosine

Q15. Patient-controlled analgesia (PCA) with intravenous morphine lets the patient self-administer a fixed bolus on demand. Its safety depends chiefly on:

(A) Giving an unlimited dose whenever the button is pressed

(B) A programmed lockout interval and a sedated patient who is too drowsy to press the button, which limits overdose

(C) Removing the need for any respiratory monitoring

(D) A background infusion being mandatory in every patient

Detailed Solutions

Q1.

Solution

Concept – the laryngeal mask airway (LMA): The LMA is a supraglottic device that seats over the larynx without entering the trachea.

Step 1 – state the key limitation: Because it sits above the glottis and does not seal the trachea, the classic LMA **does not reliably protect against aspiration** of regurgitated gastric contents.

Step 2 – practical use: It suits fasted patients for short elective cases and is a rescue device in a can't-intubate situation, but it is avoided where aspiration risk is high.

Why the other options are wrong:

- A, choice for a full stomach: is exactly what the LMA is not suited for.
- C, requires laryngoscopy: the LMA is inserted blindly, without a laryngoscope.
- D, only when awake: it is placed in an anaesthetised patient with adequate depth.

Final Answer: It does not reliably protect against aspiration $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q1

Q2.

Solution

Concept – the Cormack-Lehane grading: This system grades the best laryngeal view seen at direct laryngoscopy.

Step 1 – match the description: When only the epiglottis is visible and no part of the glottis can be seen, this is **Grade 3**.

Step 2 – the full scale: Grade 1 = whole glottis seen; Grade 2 = only the posterior glottis or arytenoids; Grade 3 = only the epiglottis; Grade 4 = neither glottis nor epiglottis. Higher grades predict difficult intubation.

Why the other options are wrong:

- B, Grade 1: the whole glottis is seen, an easy view.
- C, Grade 2: the posterior glottis is still visible.
- D, Grade 0: there is no Grade 0 in the Cormack-Lehane scale.

Final Answer: Only the epiglottis seen is Grade 3 $\Rightarrow$ A

Answer: (A) Go Back to Q2

Q3.

Solution

Concept – rapid sequence induction (RSI): RSI secures the airway quickly to minimise the window for aspiration.

Step 1 – state the indication: RSI is used when the patient is at increased risk of **regurgitation and pulmonary aspiration**, such as a full stomach, emergency surgery, pregnancy, bowel obstruction or reflux.

Step 2 – the technique: Preoxygenation, a rapid-acting induction agent and suxamethonium (or high-dose rocuronium), with cricoid pressure, allow prompt intubation without bag-mask ventilation.

Why the other options are wrong:

- B, nausea only: postoperative nausea is not the reason for RSI.
- C, difficult cannulation: is unrelated to the airway plan.
- D, wound healing: has nothing to do with induction technique.

Final Answer: Aspiration risk, as in a full stomach $\Rightarrow$ A

Answer: (A) Go Back to Q3

Q4.

Solution

Concept – ketamine: Ketamine is an NMDA-receptor antagonist producing dissociative anaesthesia.

Step 1 – match the profile: Ketamine gives dissociative anaesthesia and analgesia, is a **bronchodilator**, tends to preserve airway reflexes and supports the blood pressure, but it can raise intracranial pressure and cause emergence hallucinations.

Step 2 – practical use: It is valued for trauma, the shocked patient, asthma and short paediatric procedures; a benzodiazepine reduces the emergence phenomena.

Why the other options are wrong:

- A, propofol: lowers blood pressure and is not a bronchodilator with these features.
- C, thiopental: is a barbiturate that can worsen bronchospasm.
- D, midazolam: is a benzodiazepine sedative, not a dissociative anaesthetic.

Final Answer: Ketamine $\Rightarrow$ B

Answer: (B) Go Back to Q4

Q5.

Solution

Concept – reversal of non-depolarising block: Neostigmine, an anticholinesterase, raises acetylcholine to reverse residual block but also causes muscarinic effects.

Step 1 – name the co-drug: Neostigmine is given with an **antimuscarinic such as glycopyrrolate** (or atropine) to block the bradycardia, salivation and bronchospasm it would otherwise cause.

Step 2 – the modern alternative: For rocuronium and vecuronium, **sugammadex** directly encapsulates the relaxant and reverses even deep block, without an antimuscarinic.

Why the other options are wrong:

- A, more relaxant: would deepen, not reverse, the block.
- C, suxamethonium: is a depolarising blocker, not a reversal agent.
- D, naloxone: reverses opioids, not neuromuscular block.

Final Answer: Glycopyrrolate (or sugammadex for rocuronium) $\Rightarrow$ B

Answer: (B) Go Back to Q5

Q6.

Solution

Concept – nitrous oxide: Nitrous oxide is a weak but useful adjuvant inhalational agent.

Step 1 – identify the correct statement: Through the **second gas effect** nitrous oxide speeds the uptake of a co-administered volatile agent; on discontinuation it can cause **diffusion hypoxia**; and because it diffuses into air-filled spaces it must be **avoided in a pneumothorax** (and in bowel obstruction or a recent intraocular

gas bubble).

Step 2 – why the other claims fail: Its MAC is over 100%, so it cannot produce full anaesthesia alone; giving oxygen for a few minutes at the end prevents diffusion hypoxia.

Why the other options are wrong:

- A, potent with MAC below 1: nitrous oxide is weak, MAC above 100%.
- B, no effect on air spaces: it expands closed air-filled spaces.
- D, treats malignant hyperthermia: dantrolene does that, not nitrous oxide.

Final Answer: Second gas effect, diffusion hypoxia, avoid in pneumothorax $\Rightarrow$ C

Answer: (C) Go Back to Q6

Q7.

Solution

Concept – maximum safe dose of lignocaine: Local anaesthetic doses are capped to avoid systemic toxicity.

Step 1 – recall the figures: Lignocaine is about **3 mg/kg plain** and up to **7 mg/kg with adrenaline**, because the added adrenaline slows systemic absorption.

Step 2 – the reasoning: Adrenaline causes local vasoconstriction, prolonging the block and reducing peak plasma levels, which permits a higher safe dose.

Why the other options are wrong:

- A, 10 and 15 mg/kg: are far above the toxic threshold.
- B, 1 and 2 mg/kg: understate the safe dose.
- C, unlimited: local anaesthetics have a definite toxic ceiling.

Final Answer: 3 mg/kg plain, 7 mg/kg with adrenaline $\Rightarrow$ D

Answer: (D) Go Back to Q7

Q8.

Solution

Concept – post-dural-puncture headache (PDPH): A dural breach lets cerebrospinal fluid leak, lowering its pressure.

Step 1 – recognise the picture: A **postural** headache, worse on sitting or standing

and relieved by lying flat, appearing a day or so after spinal anaesthesia, is a PDPH.

Step 2 – the definitive treatment: Conservative measures (bed rest, fluids, simple analgesia, caffeine) are tried first; if it persists, an **epidural blood patch** seals the leak and gives rapid relief.

Why the other options are wrong:

- A, CT and anticoagulation: are for suspected venous thrombosis, not a typical postural PDPH.
- B, antibiotics: PDPH is not an infection.
- D, decompression surgery: is unnecessary and inappropriate.

Final Answer: An epidural blood patch ⇒ C

Answer: (C) Go Back to Q8

Q9.

Solution

Concept – the train-of-four (TOF): A peripheral nerve stimulator delivers four supramaximal twitches to assess neuromuscular function.

Step 1 – state what it monitors: The TOF measures the **degree of neuromuscular blockade**; with a non-depolarising block the twitches fade, and the fourth-to-first ratio quantifies recovery.

Step 2 – the target for safe reversal: A TOF ratio above 0.9 indicates adequate recovery before extubation.

Why the other options are wrong:

- B, blood glucose: is measured by a glucometer.
- C, depth of hypnosis: is judged clinically or by processed EEG.
- D, carbon dioxide tension: is shown by capnography.

Final Answer: The degree of neuromuscular blockade ⇒ A

Answer: (A) Go Back to Q9

Q10.

Solution

Concept – ASA basic monitoring standards: Minimum monitoring must be present throughout every anaesthetic.

Step 1 – list the required set: The standards demand continuous assessment of **oxygenation, ventilation, circulation and temperature**: pulse oximetry, capnography, the ECG and blood pressure, with an oxygen analyser and a disconnection alarm.

Step 2 – the principle: A qualified anaesthetist must be present continuously, using these monitors to detect problems early.

Why the other options are wrong:

- A, blood pressure only: omits oxygenation and ventilation monitoring.
- B, hourly chest X-ray: is not a monitoring standard.
- C, arterial line in all: is invasive and reserved for specific indications.

Final Answer: Oxygenation, ventilation, circulation and temperature $\Rightarrow$ $\boxed{D}$

Answer: (D) Go Back to Q10

Q11.

Solution

Concept – classification of haemorrhagic shock: The ATLS classes grade blood loss by physiological signs.

Step 1 – read the signs: Tachycardia with frank hypotension, a low urine output and altered mental state indicate advanced shock, corresponding to loss of **more than 30 to 40%** of blood volume (class III to IV).

Step 2 – the class scheme: Class I is up to 15% (minimal signs), class II 15 to 30% (tachycardia, narrowed pulse pressure), class III 30 to 40% (hypotension), class IV over 40% (life-threatening).

Why the other options are wrong:

- A, under 5%; C, under 10%: would show few or no signs (class I).
- B, 100%: is incompatible with life and not a graded class.

Final Answer: More than 30 to 40% loss (class III to IV) $\Rightarrow$ $\boxed{D}$

Answer: (D) Go Back to Q11

Q12.

Solution

Concept – laryngospasm: Laryngospasm is a reflex closure of the vocal cords, often at a light plane of anaesthesia.

Step 1 – the initial management: Remove the stimulus, apply 100% oxygen with continuous positive airway pressure and a firm jaw thrust, and **deepen anaesthesia**; if it persists, give **suxamethonium** to relax the cords.

Step 2 – the sequence: Escalation follows the aim of preventing hypoxia; the Larson manoeuvre (pressure at the laryngospasm notch) can also help.

Why the other options are wrong:

- B, emergency tracheostomy: is a last resort, not the first step.
- C, adrenaline first: is not the initial treatment for laryngospasm.
- D, leave to recover: risks fatal hypoxia and is unsafe.

Final Answer: Oxygen with CPAP, deepen anaesthesia, then suxamethonium $\Rightarrow$ A

Answer: (A) Go Back to Q12

Q13.

Solution

Concept – accidental awareness under anaesthesia: Awareness is consciousness during a general anaesthetic, sometimes with recall.

Step 1 – identify the risk factor: Risk rises with **neuromuscular blockade combined with a total intravenous technique** (where a pump failure can go unnoticed), and during **obstetric and cardiac surgery** where lighter planes are used.

Step 2 – prevention: Depth-of-anaesthesia monitoring (processed EEG), careful drug delivery and vigilance reduce the risk.

Why the other options are wrong:

- A, deliberately deep anaesthesia: lowers, not raises, the risk.
- B, using a depth monitor: is protective against awareness.
- D, avoiding relaxants: reduces risk, since movement would reveal light anaesthesia.

Final Answer: Neuromuscular block with TIVA, obstetric or cardiac surgery $\Rightarrow$ C

Answer: (C) Go Back to Q13

Q14.

Solution

Concept – shockable rhythms in ACLS: Only certain arrest rhythms respond to a defibrillation shock.

Step 1 – classify the rhythm: Ventricular fibrillation and pulseless ventricular tachycardia are the **shockable** rhythms, treated with **immediate unsynchronised defibrillation**, high-quality CPR and adrenaline.

Step 2 – the contrast: Asystole and pulseless electrical activity are non-shockable and are managed with CPR and adrenaline but no shock.

Why the other options are wrong:

- A, synchronised cardioversion: is for unstable rhythms with a pulse, not pulseless VF.
- B, carotid massage; D, adenosine: are for a conscious patient with a narrow-complex tachycardia, not cardiac arrest.

Final Answer: Immediate unsynchronised defibrillation (shockable) $\Rightarrow$ C

Answer: (C) Go Back to Q14

Q15.

Solution

Concept – patient-controlled analgesia (PCA): PCA lets the patient trigger small preset boluses of an opioid such as morphine.

Step 1 – state the safety principle: Safety rests on a programmed **lockout interval** and the fact that a **sedated patient becomes too drowsy to press the button**, so the negative-feedback loop limits over-sedation and overdose.

Step 2 – the settings: A typical morphine PCA gives a 1 mg bolus with a 5-minute lockout and no routine background infusion, with oxygen and observation of respiratory rate and sedation.

Why the other options are wrong:

- A, unlimited dose: the lockout specifically prevents this.
- C, no monitoring: respiratory rate and sedation must still be watched.
- D, mandatory background infusion: a background infusion raises the risk of

respiratory depression and is not routine.

Final Answer: Lockout interval with the self-limiting sedated patient $\Rightarrow$ B

Answer: (B) Go Back to Q15

Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	B	2	A	3	A	4	B	5	B
6	C	7	D	8	C	9	A	10	D
11	D	12	A	13	C	14	C	15	B